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10/589,015

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EXAMINER

RAO, SAVITHA M

ART UNIT

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4131

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/589,015	<b>Applicant(s)</b> MIZELL ET AL.	
	<b>Examiner</b> SAVITHA RAO	<b>Art Unit</b> 4131	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 May 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 22-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 22-42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |



### **DETAILED ACTION**

Claims 22-42 are pending and subject to this examination

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 22-25 and 28-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shuto et.al.(EP 0504812) or Kamm et al (Journal of Economic Entomology Vol 65 issue 2 pp: 364-367) or Miyake et. al. (Journal of Pesticide Science, vol 16 (3) pp 441-448, (1991)) in view of Redak (Proc. 2003 CDFA Pierce's Disease research Symposium, pp 302-307, (2003))

In the instant claims 22-25 and 28-42, applicant claims a method for controlling a leafhopper population such as glassy-winged sharpshooter with an insect growth regulator which is a juvenile hormone analog such as methoprene which affects the reproductive system of a female leafhopper while in diapause.

Shuto et.al. teaches aromatic juvenile hormone analogs of formula (I) (Page 2, line 10-20) as having excellent juvenile hormone like activity against insect pests and exhibiting various actions such as metamorphosis inhibition, embryogenesis inhibition and sterilization and are thus efficacious as growth regulators, chemosterilants, ovicides or reproduction inhibitory agents on various insect pests (page 2, lines 30-36).

Shuto cites leafhoppers such as green rice leafhopper as one of the pests against which the aromatic compound (I) exhibit controlling effects (page 29, lines 11-20) (reads on instant claims 22-23,33-34, 39 and 42). Shuto also teaches that the aromatic compounds (I) may be used alone as insecticides or in mixtures with other insecticides and/or acaricides to enhance or expand their insecticidal and pesticidal use and lists several examples of other insecticides that could be used (page 30, lines 32-

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page 31, line 15) (reads on instant claim # 38). Additionally, Shuto teaches the practical use of the compound (I) as insecticides wherein they can be mixed with appropriate additives to formulate compositions which could be oil sprays, emulsifiable concentrates, wettable powders, flowable concentrates, granules, dusts and aerosols (page 31, lines 16-23 and formulation examples on pages 39-40) (reads on claims 35-36). In test examples on page 42-43, Shuto teaches the inhibitory activity of the compound (I) against green rice leafhoppers wherein the female adults were reproductively active (lines 5-8) (reads on claim 30)

Kamm teaches the effect of synthetic juvenilizing hormone, methyl-10-11-epoxy-7-ethyl-3, 11-dimethyl-2, 6-tridecadienoate on *Draeculacephala crassicornis* (Leafhopper specie) was determined by applying the hormone topically to females in diapause (page 364, Abstract right column). Kamm teaches that synthetic hormones initiated vitellogneiss when applied topically to females of *D.crassicornis* in diapause (page 367, left column, first paragraph).

Miyake et. al. teaches the activity of juvenile hormone analogue (NC-170) on four species of leafhoppers. Miyake teaches that NC-170 has excellent morphogenetic activity in all of the four species of leafhoppers (page 447, right column, 2nd paragraph). Miyake also teaches that leafhoppers generally deposit eggs in rows beneath the epidermis of rice stems, hence direct ovicidal effect of chemicals are frequently halted. However, NC-170 (juvenile hormone analog) is taken up by adult females and transferred into the ovaries and oviposited eggs where the embryogenesis is disrupted (page 447, left column, 2nd paragraphs, lines 4-10)

Shuto or Kamm or Miyake do not teach that the leafhopper specie is specifically glassy-winged sharpshooter and the juvenile hormone analog is any one of the following: epofenonate, fenoxycarb, hydroprene, kinoprene, methoprene, pyriproxyfen or triprene.

Both of these deficiencies are cured by Redak.

Redak teaches the effect of insect growth regulators as being one of the most effective against glassy-winged sharpshooters among many insecticides tested (reads on instant claims 23, 33, 34 and 42)(page 302, Results section, lines 2-3). Redak also teaches that the insect growth regulators tested (buprofizen, novaluron and pyriproxifen) induced nymphal mortality over the development time of the insect (page 303, Conclusions section, lines 10-11).

The state of the art at the time of invention as evidenced by the above references indicates the use of several juvenile hormone analogs as insecticides. It would have been obvious to one of ordinary skill in the art to combine the above references and use them to develop a method for controlling leaf-hopper population specifically that of glassy-winged sharpshooter, with insect growth regulators, specifically juvenile hormone analogs. The artisan would have been motivated to do so to obtain an optimal method for eradication of leaf hoppers such as glassy-winged sharpshooter which are major pests of grape plants. Considering the state of the art at the time of invention, as evidenced by the above references and because the use of juvenile hormone analogs as insecticides is art-recognized to be effective against various leafhopper species, one skilled in the art would have been motivated to combine the teachings of the references

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above to develop a method for controlling glassy-winged sharpshooter using juvenile hormone analog with a reasonable expectation of success.

Further, the references are all from the same technical field (constituted with same ingredients and share common utilities), and are pertinent to the problem which applicant concerns about. MPEP 2141.01 (a)

Claim 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyake et al (Journal of Pesticide Science, vol 16 (3) pp 441-448, (1991)) in view of Ayoade et. al. (Journal of Insect Physiology vol 45, pp: 93-100 (1999))

Instant claims 26-27 are drawn to the method for controlling leafhoppers, wherein the juvenile hormone analog is selected from a group consisting of methoprene, knioprene and hydroprene most preferably that of methoprene.

The teachings of Miyake are detailed above in the previous rejection. Miyake does not teach the specific effect of methoprene on leafhoppers. This deficiency is cured by Ayoade et.al.

Ayoade et. al teaches the effects of methoprene on metamorphosis, genetically mediated wing-dimorphism and ovarian growth, in *Nilaparvata lugens* a brown planthopper (page 94, right column, 2nd paragraph). Ayoade also teaches that methoprene was effective on ovarian growth in the presumptive macropters resulting in ovarian growth surpassing those of the controls (page 96, right column, 1st paragraph, lines 6-10).



Brown planthoppers taught in Ayoade et. al falls under the same insect suborder (Auchenorrhynch) and order (Hemiptera) as the leafhoppers (David R., Hemiptera. True bugs, cicadas, leafhoppers, aphids, etc. Version 01 January 1995- Reference provided to demonstrate the fact). One of ordinary skilled in the art would have been motivated to combine the teachings of the two references to use methoprene against leafhoppers. with a reasonable expectation of success, since methoprene has been shown to have an effect on planthoppers (Ayoade et al) which is in the same order and suborder as leafhopper and juvenile hormone analogs are taught to affect leafhoppers (Miyake et. al). Further, the references are both from the same technical field (constituted with same ingredients and share common utilities), and are pertinent to the problem which applicant concerns about. MPEP 2141.01 (a)

Experimental data provided in the instant disclosure by the applicant is acknowledged. However, juvenile hormone analogs and its insecticidal properties are known in the art as detailed in the above rejections. Therefore, the experimental outcome disclosed is expected and does not demonstrate any surprising or unexpected results. Therefore, the data cannot be used to overcome the instant rejection.

### ***Conclusion***

Claims 22-42 are rejected. No claims are allowed

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SAVITHA RAO whose telephone number is (571)270-5315. The examiner can normally be reached on Mon-Fri 8 am to 5 pm..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet Andres can be reached on 571-272-0867 and Cecilia Tsang can be reached on 571-272-0567. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SAVITHA RAO  
Examiner  
Art Unit 4131

/Cecilia Tsang/

Supervisory Patent Examiner, Art Unit 4131